

CLAIMS

1. A light emitting element comprising:

5       n pieces of light emitting layers (n is a natural number) between a first electrode  
and a second electrode; and

          a first layer containing a substance that transports a hole easily and a substance  
with an electron accepting property, and a second layer containing a substance that  
transports an electron easily and a substance with an electron donating property between  
the m<sup>th</sup> light emitting layer (m is a natural number of  $1 \leq m \leq n$ ) and the m + 1<sup>th</sup> light  
10       emitting layer, the second layer being in contact with the first layer,

          wherein the substance with the electron accepting property is molybdenum  
oxide.

2. A light emitting element comprising:

15       n pieces of layer groups (n is a natural number) between a pair of electrodes,  
each of the layer groups including:

          a first layer containing a substance that transports a hole easily and a substance  
with an electron accepting property;

          a second layer containing a substance that transports an electron easily and a  
20       substance with an electron donating property; and

          a light emitting layer provided between the first layer and the second layer,

          wherein in the n pieces of layer groups, the first layer included in the m<sup>th</sup> layer  
group (m is a natural number of  $1 \leq m \leq n$ ) and the second layer included in the m + 1<sup>th</sup>  
layer group are laminated in contact with each other.

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3. A light emitting element comprising:

          n pieces of light emitting layers (n is a natural number) between a first electrode  
and a second electrode with higher reflectance than that of the first electrode; and

          a first layer containing a substance that transports a hole easily and a substance  
30       with an electron accepting property and a second layer containing a substance that

transports an electron easily and a substance with an electron donating property between the  $m^{\text{th}}$  light emitting layer ( $m$  is a natural number of  $1 \leq m \leq n$ ) and the  $m + 1^{\text{th}}$  light emitting layer, the second layer being in contact with the first layer,

wherein a peak wavelength of emission spectrum of the  $m+1^{\text{th}}$  light emitting layer is shorter than that of the  $m^{\text{th}}$  light emitting layer, and

wherein the  $n$  pieces of light emitting layers are arranged such that the  $m + 1^{\text{th}}$  light emitting layer is placed closer to the second electrode than the  $m^{\text{th}}$  light emitting layer.

10 4. A light emitting element comprising:

$n$  pieces of light emitting layers between a first electrode and a second electrode with higher reflectance than that of the first electrode; and

a first layer containing a substance that transports a hole easily and a substance with an electron accepting property and a second layer containing a substance that transports an electron easily and a substance with an electron donating property between the  $m^{\text{th}}$  light emitting layer ( $m$  is a natural number of  $1 \leq m \leq n$ ) and the  $m + 1^{\text{th}}$  light emitting layer, the second layer being in contact with the first layer,

wherein the  $n$  pieces of light emitting layers are arranged such that the light emitting layer exhibiting a shorter peak wavelength of emission spectrum is provided closer to the second electrode.

5. The light emitting element according to claim 3 or claim 4, wherein the substance with the electron accepting property is molybdenum oxide.

25 6. A light emitting element comprising:

a first layer, a second layer formed in contact with the first layer, a third layer and a fourth layer formed in contact with the third layer between a first electrode and a second electrode, wherein the first layer and the third layer contain a substance that transports a hole easily and a substance with an electron accepting property, and the second layer and the fourth layer contain a substance that transports an electron easily and

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a substance with an electron donating property;

a first light emitting layer emitting red light between the first layer and the first electrode;

5 a second light emitting layer emitting green light between the second layer and the third layer; and

a third light emitting layer emitting blue light between the fourth layer and the second electrode.

10 7. The light emitting element according to claim 6, wherein the substance with the electron accepting property is molybdenum oxide.

8. The light emitting element according to claim 6 or claim 7, wherein the second electrode reflects light more easily as compared with the first electrode.

15 9. A light emitting device comprising any one of light emitting elements as disclosed in claim 1 through claim 8.

20 10. A light emitting element comprising:  
at least two light emitting layers between a first electrode and a second electrode;  
and

a first layer containing a substance that transports a hole easily and a substance with an electron accepting property, and a second layer containing a substance that transports an electron easily and a substance with an electron donating property between a first light emitting layer and a second light emitting layer, the second layer being in  
25 contact with the first layer,

wherein the substance with the electron accepting property is molybdenum oxide.

30 11. A light emitting element comprising:  
at least two layer groups between a pair of electrodes, each of the layer groups

including:

a first layer containing a substance that transports a hole easily and a substance with an electron accepting property;

5 a second layer containing a substance that transports an electron easily and a substance with an electron donating property; and

a light emitting layer provided between the first layer and the second layer,

wherein in the layer group, the first layer included in a first layer group and the second layer included in a second layer group are laminated in contact with each other.

10 12. A light emitting element comprising:

at least two light emitting layers between a first electrode and a second electrode with higher reflectance than that of the first electrode; and

15 a first layer containing a substance that transports a hole easily and a substance with an electron accepting property and a second layer containing a substance that transports an electron easily and a substance with an electron donating property between a first light emitting layer and a second light emitting layer, the second layer being in contact with the first layer,

wherein a peak wavelength of emission spectrum of the second light emitting layer is shorter than that of the first light emitting layer, and

20 wherein the light emitting layers are arranged such that the second light emitting layer is placed closer to the second electrode than the first light emitting layer.

13. A light emitting element comprising:

25 at least two light emitting layers between a first electrode and a second electrode with higher reflectance than that of the first electrode; and

30 a first layer containing a substance that transports a hole easily and a substance with an electron accepting property and a second layer containing a substance that transports an electron easily and a substance with an electron donating property between a first light emitting layer and a second light emitting layer, the second layer being in contact with the first layer,

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wherein the light emitting layers are arranged such that the light emitting layer exhibiting a shorter peak wavelength of emission spectrum is provided closer to the second electrode.

- 5           14. The light emitting element according to claim 12 or claim 13, wherein the substance with the electron accepting property is molybdenum oxide.

15. A light emitting device comprising any one of light emitting elements as disclosed in claim 10 through claim 13.